ELECTRONIC GAMING MACHINE

FIELD OF INVENTION

[0001] The embodiments of the present invention relate generally to electronically implemented gaming machines. More particularly, a gaming machine incorporating a secondary or bonus game.

BACKGROUND

[0002] Slot machines, video poker machines, keno machines and other gaming machines have taken over the floors of most casinos. More and more people are playing gaming machines because they are easy to learn, require little or no skill and provide large returns (e.g., 98% of the money played). In addition, gaming machines include themes aimed at attracting new players and retaining experienced players.

[0003] One recently developed successful feature of gaming machines is the secondary or bonus game. A secondary game electrically communicates with a gaming machine primary game and is actuated upon certain preestablished primary game outcomes. For example, in a slot machine, the primary game outcome is conventionally determined by a series of mechanical or video reels, depicting gaming indicia, and one or more paylines.

[0004] One example of a popular slot machine incorporating a primary and secondary game is the popular Wheel of Fortune® slot machine. The Wheel of Fortune® slot machine includes a primary game comprising mechanical reels and a secondary game facilitated by a rotatable wheel analogous to the "wheel" associated with the game show of the same name. The secondary game is activated in response to a specific preestablished primary game outcome. In practice the specific primary game outcome occurs when the third reel payline of the primary game intersects a "spin the wheel" indicia. In fact, only the third reel includes a "spin the wheel" indicia. After the "spin the wheel" indicia appears, the player depresses a "spin the wheel" button causing the mechanical secondary wheel to spin thereby resulting in random secondary award.

[0005] Secondary games have become very popular because players enjoy the excitement and the extra opportunity to win an additional award. Moreover, the secondary games are conventionally programed to result in a winning outcome on each activation. However, the secondary game are typically mundane games such as wheels spinning or numbers randomly illuminating. Moreover, many secondary games have no player interaction. Therefore, players desire more exciting secondary games which provide player participation.

SUMMARY

[0006] Accordingly, the embodiments of the present invention are facilitated by an electronic gaming machine incorporating a secondary game in communication with a primary game. The primary game may be in the form of a slot machine, having mechanical or video reels, a video poker machine, keno machine or other electronically implemented game. The secondary game takes the well-known form of a container of numbered balls which when activated are agitated by an air source.

[0007] While the use of a container of numbered balls, which are agitated by an air source, for a secondary game is well-known, the use normally comprises one or two pre-selected balls from a concealed location being presented to the player. The presented numbered balls are then used to determine the amount of the secondary award. For example U.S. Patent No. 5,823,874 to Adams discloses such a system. Therefore, the container of balls being agitated is for show and ultimately has no bearing on the outcome. Additionally, players have no input regarding the balls presented.

[0008] The embodiments of the present invention utilize agitated numbered balls to determine a secondary award and in certain embodiments provide player interaction. Accordingly, a container of numbered balls in communication with an air source and a rotatable wheel having a plurality of ball compartments. The rotatable wheel circumscribes a perimeter of the container such that the balls are able to enter the compartments in a random fashion.

[0009] More particularly, the container is hemispherical and projects from a top portion of the gaming machine. Ideally, the rotatable wheel is positioned flush with the gaming machine within the container. In this manner, as the wheel rotates and the balls are agitated by the air source, balls are randomly captured by the plurality of compartments when one or more access doors open allowing a ball to enter the compartment. When opened, a vacuum inside the compartment pulls in a random ball.

[0010] In one embodiment, multiple pointers about the wheel identify one or more winning balls. The numbers on the identified balls are summed to determine a bonus award or act as multipliers to enhance a primary game award. Alternatively, in a keno embodiment there are 80 balls each depicting a unique number between 1-80. Additionally, in the keno embodiment the gaming machine incorporates a keno grid allowing a player to pre-select his or her desired numbers, An award is then based on the number of matches between the selected numbers and the numbers on the randomly captured balls.

[0011] The embodiments disclosed above and other embodiments are described in more detail hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Fig. 1 shows a front view of a slot machine having a secondary game in the form of a hemispherical container, rotatable wheel and a plurality of numbered balls;

[0013] Fig. 2 shows a side view of the gaming machine of Fig. 1;

[0014] Fig. 3 shows a close-up front view of the hemispherical container, rotatable wheel and plurality of numbered balls;

[0015] Fig. 4 shows a close-up side view of the hemispherical container, rotatable wheel and plurality of numbered balls

[0016] Fig. 5 shows a front view of a keno machine embodiment of the present invention;

[0017] Fig. 6 shows a front view of the keno machine embodiment once a player has selected his or her keno numbers; and

[0018] Fig. 7 shows a front view of the keno machine embodiment indicating which

selected numbers have been matched by captured balls.

DETAILED DESCRIPTION

[0019] The operation of electronic gaming machines, including slot machines and video poker machines, are well known in the industry so that the minute details are not set forth herein. In general terms, slot machines and vide poker machines are controlled by processors including, or in communication with, a random number generator. The random number generator generates machine outcomes.

[0020] Reference is now made to the figures wherein like parts are referred to by like numerals throughout. Figs. 1 and 2 illustrate a front and side view, respectively, of a slot machine, generally denoted by reference numeral 100, for facilitating some of the embodiments of the present invention. The slot machine 100 incorporates a primary wagering game, utilizing multiple reels 110-1 through 110-3, and a secondary game utilizing a container 120, rotatable wheel 130 having multiple ball compartments 140 and a plurality of numbered balls 150. While only three reels 110-1 through 110-3 are shown, more or less than three reels may be utilized to enable the primary wagering game. For example, two, four or five reels may be utilized as well. In addition, the reels 110-1 through 110-3 may be embodied in a mechanical or video format.

[0021] The three reels 110-1 through 110-3 include a series of gaming indicia 160-1 through 160-3 on each reel 110-1 through 110-3. Upon activation, the three reels 110-1 through 110-3 spin until each reel from left to right is stopped by a machine processor at preestablished positions. A pay line 170 defines winning primary game outcomes. While only a single pay line 170 is shown, multiple pay lines, including diagonal and zig-zag pay lines, may be incorporated. Based on the alignment of the gaming indicia 160-1 through 160-3 along the pay line 170 the processor determines a player's winnings, if any.

[0022] The slot machine 100 includes several player buttons which act as interfaces between the player and the machine processor. Player buttons include a reel activation button 180, a play one credit button 190, a play maximum credits button 200 and a secondary game activation button 210. Instead of the reel activation button 180 a

player may activate the reels by means of a slot machine arm 220. Each of the player buttons and the arm 220 are in electrical communication with the processor such that the player may communicate his or her intentions with the machine processor. A player may also interface with the processor through a touchscreen system.

[0023] The machine 100 also incorporates a coin acceptor 230 and a credit display 240. Players may insert vouchers or bills via bill acceptor 250. The credit display 240 allows players to play on credit such that any gaming wins or loses are immediately depicted on the display 240. Once a playing session ends, the player may cash out for any monies owed. While not shown, the machine 100 may also incorporate a ticket dispenser for printing tickets for redemption at a cashier window. Such cashless systems are becoming increasingly popular in many gaming jurisdictions.

[0024] In practice, the secondary or bonus game is activated in response to preestablished primary game outcomes. Upon activation, the plurality of numbered balls 150 are agitated by an air source (not shown) in communication with the container 120. As shown in Fig. 2, the container 120 may located entirely outside of the confines of the upper portion of the slot machine 100. That is, the container 120 takes the form of one-half of a sphere with the rotatable wheel 130 flush with the upper portion of the slot machine 100. In a first embodiment, once the balls 150 are agitated, the rotatable wheel 130 begins to incrementally rotate so that each compartment 140 temporarily communicates with a suction or vacuum source (not shown) until a numbered ball 150 is captured by a subject compartment 140. A motor (not shown) in communication with the wheel 130 provides a means of rotating the wheel 130. Then, the wheel 130 rotates so that each other compartment 140 may capture a numbered ball 150. An access door 260 positioned at twelve o'clock systematically opens to reveal an opening between the compartment 140 and container 120 to permit the suction or vacuum source to pull a numbered ball 150 into each compartment 140. Once the wheel 130 rotates the container prevents the captured balls 150C from exiting the compartments 140. After the game is played, the access door 260 is opened to allow the captured balls 150C to be deposited from each compartment 140 back into the container 120.

This method of using a suction and accessible opening is similar to a traditional keno ball container used throughout the casino industry.

[0025] Continuing with the first embodiment, after each compartment 140 captures a numbered ball 150 the rotatable wheel 130 may spin quickly to create anticipation and excite the player and finally stop at a pre-established position. One or more pointers 270-1 through 270-4 positioned around the container 120 and compartments 140 then identify which captured balls 150C are then used to determine the secondary or bonus award. The pointers 270-1 through 270-4 during activation of the container 120 may be determined by the primary game outcome or randomly by the processor. Therefore, one, two, three or four pointers 270-1 through 270-4 may be active during the play of the secondary game. The pointers 270-1 through 270-4 which are active may be illuminated or otherwise highlighted to alert the player. Therefore, any single pointer 270-1 through 270-4 or combination of pointers shown in Fig. 3 may be used to determine an award.

[0026] Bar code symbols on the balls 150, video technologies and other means provide a system for the informing the processor which ball 150 is in which compartment 140 so that the processor can ensure the proper balls 150 are identified by the pointers 270-1 through 270-4. In other words, the award amount is first determined by the random number generator and then the processor controls the operation of the wheel 130 and pointers 270-1 through 270-4 to generate the preestablished award.

[0027] To increase the speed at which the balls 150 are captured, more than one access door 260 and corresponding opening may be incorporated about the wheel 130 (e.g., twelve o'clock, three o'clock, six o'clock and nine o'clock). In this manner, each opening is placed in communication with a suction or vacuum. Any number of access doors 260 and corresponding openings are conceivable.

[0028] In another embodiment, the pointers 270-1 through 270-4 may be integrated on a rotatable unit about a perimeter of the container 120 and compartments 140 so that the rotatable unit rotates in an opposite or the same direction as the rotation of the wheel 130 and compartments 140. Alternatively, the wheel 130 and compartments 140

may remain stationary while the pointers 270-1 through 270-4 rotate and randomly stop thereabout. For example, each of the balls 150C captured by a compartment 140 and identified by an active pointer 270-1 through 270-4 may be summed to determine a bonus award. Alternatively, the identified captured ball or balls 150 may be used to multiply a primary game award. Any number of other award schemes are possible. Moreover, any number of pointers may be incorporated around the container 120 and compartments 140 to facilitate the particular award scheme.

[0029] Fig. 4 shows a side view of the container 120, rotatable wheel 130 and the plurality of balls 150. Other wheel configurations are possible without departing from the spirit and scope of the embodiments of the present invention.

[0030] Now referring to Figs. 5-7, a primary game takes the form of an electronic keno machine 300. Traditional electronic keno machines include a keno touchscreen for players to select keno numbers. Once the keno numbers are selected, a random number generator selects twenty numbers and highlights the randomly generated numbers on the keno touchscreen. Based on the number of matches between the selected numbers and the randomly generated numbers an award is determined. In the keno embodiment of the present invention, 80 numbered balls 150 each depict a unique numeral between 1-80. A keno touchscreen 310 provides means for a player to select a series of keno numbers 320. Once the player selects his or her keno numbers 320 via the keno touchscreen 310, the compartments 140 capture random balls 150 as described above. The keno numbers on the captured balls 150 are then compared to the selected keno numbers 320 to determine an award. In this arrangement, the container 120, rotatable wheel 130 and plurality of balls 150 may represent a primary game or secondary game.

[0031] The number of compartments 140 and balls 150 used with the keno embodiment is an arbitrary selection. That is, there may be twenty compartments 140 as shown or more or less depending on the choice of the manufacturer or casino.

[0032] Although numbered balls 150 have been discussed extensively, the balls may

also depict symbols or other indicia, including one or more "WILD" balls. It is also possible that the keno embodiment may be integrated on a slot machine, video poker machine or the like in the form of a secondary game.

[0033] Moreover, although the invention has been described in detail with reference to a one or more embodiments, additional variations and modifications exist within the scope and spirit of the invention as described and defined in the following claims.